

WHAT IS CLAIMED IS:

1. A multi-axis scanning module for providing electromagnetic radiation to and collecting emitted light and reflected light from a photo-stimulatable radiographic media, comprising:

a) a housing moveable on a first axis relative to the radiographic media wherein the housing comprises:

- i) a reflective chamber;
- ii) a channel for transmitting a laser beam in communication with the reflective chamber;
- iii) a first opening in communication with the reflective chamber adapted for permitting the electromagnetic radiation to pass out of the chamber and the emitted light and the reflected light to be gathered in the chamber; and
- iv) a second opening in communication with the reflective chamber;

b) a laser disposed in the channel to generate the beam of electromagnetic radiation through the channel and out the first opening to stimulate an area on the radiographic media, wherein the reflective chamber is adapted to receive (a) light emitted from the stimulated area on the radiographic media and (b) reflected light from the stimulated area;

c) a filter for passing only light emitted from the area, wherein the filter is disposed between the reflective chamber and the second opening;

d) a light detector disposed adjacent the filter in the second opening for detecting the emitted light; and

e) wherein the multi-axis scanning module is adapted to move transitionally on the first axis while the laser is dithered on a second axis relative to the first axis to enable swath scanning of the radiographic media.

2. The scanning module of claim 1 wherein the reflective chamber is ellipsoidal.

3. The scanning module of claim 1 wherein the laser is modulated.
4. The scanning module of claim 1 wherein the dither rate of the first axis is 16k Hertz.
5. The scanning module of claim 1 wherein the reflective chamber comprises a mirrored coating.
6. The scanning module of claim 5 wherein the mirrored coating provides a reflectivity range of 80% to 95%.
7. The scanning module of claim 1 wherein the radiographic media is a phosphor sheet.
8. The scanning module of claim 1 wherein the laser is a multimode laser, 635 nanometer, 100 mW, or a single mode 635 nanometer, 100 mW laser.
9. The scanning module of claim 1 wherein the filter is blue.
10. The scanning module of claim 9 wherein the filter has an antireflective coating disposed on at least one surface.
11. The scanning module of claim 1 wherein the housing comprises a plastic, a polycarbonate, a composite, a metal material or combinations thereof.
12. The scanning module of claim 1 wherein the housing has a molded construction.

13. The module of claim 1 wherein the dithering in the second axis is between 1 millimeter and 3 millimeters.

14. The module of claim 14 wherein the dithering in the second axis is 1.5 millimeters.

15. The module of claim 1 wherein the laser is dithered using a gavel mirror or a piezo transducer.

16. The module of claim 1 wherein radiographic media is selected from the group, a radiographic screen, a radiographic plate, a radiographic sheet, and combinations thereof.

17. The module of claim 1 wherein the collection efficiency of light by the module is approximately 52%.

18. A multi-axis system for scanning radiographic media using a multi-axis swath scanning technique comprising:

a) at least one multi-axis scanning module comprising:

i) a housing moveable on a first axis relative to the radiographic media wherein the housing comprises:

1) an ellipsoid reflective chamber;

2) a channel for transmitting a laser beam in communication with the ellipsoid reflective chamber;

3) a first opening in communication with the ellipsoid reflective chamber adapted for permitting light to pass out of the chamber and light to be gathered in the chamber; and

4) a second opening in communication with the ellipsoid reflective chamber;

- ii) a laser, disposed in the channel to generate a beam of stimulating electromagnetic radiation through the channel and out the first opening to stimulate a area on the radiographic media;
 - iii) a filter for passing only light emitted from the area, wherein the filter is disposed between the chamber and the second opening;
 - iv) a light detector disposed adjacent the filter in the second opening for detecting the emitted light; and
 - v) wherein the multi-axis scanning module is adapted to move transitionally on the first axis while the laser is dithered on a second axis relative to the first axis to enable swath scanning of the radiographic media and production of an electronic signal;
- b) an analog to digital converter in communication with the light detector;
- c) a control processing unit in communication with the analog to digital converter for receiving, storing, and processing the digital signal; and
- d) an output device for outputting the digital signal.

19. The system of claim 18 wherein the output device is a film writer, a printer, or a soft display.

20. The system of claim 18 wherein the dither rate of the first axis is 16k Hertz.

21. The system of claim 18 wherein the reflective chamber comprises a mirrored coating.

22. The system of claim 18 wherein the mirrored coating provides a reflectivity with a range of 80 % to 95%.

23. The system of claim 18 wherein the radiographic media is a phosphor sheet.

24. The system of claim 18 wherein the laser is a multimode laser, 635 nanometer, 100 mw, or a single mode 635 nanometer, 100 mw laser.

25. The system of claim 18 wherein the filter is blue.

26. The system of claim 18 wherein the filter has an antireflective coating disposed on at least one surface.

27. The system of claim 18 wherein the housing comprises a plastic, a polycarbonate, a composite, a metal material or combinations thereof.

28. The system of claim 18 wherein the housing has a molded construction.

29. The system of claim 18 wherein the dithering in the second axis is between 1 millimeter and 3 millimeters.

30. The system of claim 18 wherein the dithering in the second axis is 1.5 millimeters.

31. The system of claim 18 wherein the laser is dithered using a gavel mirror or a piezo transducer.

32. The system of claim 18 wherein radiographic media is selected from the group, a radiographic screen, a radiographic plate, a radiographic sheet, and combinations thereof.

33. The system of claim 18 wherein the collection efficiency of light by the module is approximately 52%.

34. The system of claim 18 further comprising between 2 and 8 scanning modules for swath scanning multiple images simultaneously.